

Notice of Allowability

Application No.

10/798,320

Examiner

Deborah Yee

Applicant(s)

FUKUMOTO ET AL.

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's amendment and remarks dated 11-15-06.
2. ☒ The allowed claim(s) is/are 1-4.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Deborah Yee
Primary Examiner
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Allowable Subject Matter

1. Claims 1 to 4 are allowed.
2. The following is an examiner's statement of reasons for allowance: The art of record does not teach or fairly suggest the high speed tool steel alloy, as claimed, having improved tool performance and high toughness which are achieved by reducing the variation in carbides by controlling average carbide size up to 0.5 microns and dispersing said fine carbides in extremely large numbers of at least 80,000 particles/ mm².
3. Although prior art tool steels have alloying elements and carbide size ranges that overlap or closely approximate those recited by the claims, they fail to teach the claimed high carbide density dispersion, and such property would not be expected since the prior art process of making is different. As stated in applicants' remarks dated 11-15-06, the dispersion of carbides of the present invention is not achieved by the conventional method of quenching and tempering but by the special control of the distribution of carbides in the matrix of the steel ingot prior to quenching and tempering of the ingot casting. Applicants' specification on page 12 teaches controlling carbide size and distribution by subjecting steel ingot to soaking at a temperature range of 1200 to 1300C for preferably 10 to 20 hours followed by temporarily cooling down to a temperature of equal to or less than 900C at a cooling rate of more than 3C/minute for the surface ingot temperature prior to reheating and hot working. The criticality of the time and temperature for soaking, and cooling rate are disclosed by applicant's test data

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shown in figures 3 to 5 in order to achieve a very high Charpy impact value of more than 100J/cm² or even more than 200 J/cm².

4. Moreover, applicants' remarks dated 11-15-06 on pages 8 to 14 disclose the specific differences between art of record and present invention.

Drawings

5. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: In Figures 6 and 7, "daiameter" has been changed to ---diameter---. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.


6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-27211253. The examiner can normally be reached on monday-friday 6:00am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Deborah Yee
Primary Examiner
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